BASIC MARKET SURVEY OF THE

FEED INTERNATIONAL

AUDIENCE

Geographic Analysis Of:

- Tons Of Feed Made For Sale, By Species
- Feed — Forms, Additives, Disposition, Delivery
- Feed Mill Capacity Utilization; Expecting New Construction
- Feed Volume Changes — Past, Future
- Feed Plant Equipment Recently Bought; To Be Bought
- Other Information

August 1986

Research Section of Watt Publishing Co.
Mount Morris, IL 61054 U.S.A.

Price $25.00

C9550-10-F

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FEED INTERNATIONAL BASIC MARKET SURVEY

Purpose of Survey

The main purpose of this survey was to obtain - for the first time - extensive data related to the market represented by the readers of FEED INTERNATIONAL who prepare feed in Europe, the Middle East and Africa, Asia (except Middle East) and the Pacific islands, and Latin America.

SURVEY METHOD

Sample Design: Every nth name was computer-drawn from the August 1985 FEED INTERNATIONAL BPA Qualified circulation list classified as (a) Feed or Pre-Mix Manufacturers Formulating Feed For Sale, and (b) Feed Mixers. (In the survey it was noted that the proportion of respondents who classified themselves as manufacturers of feed primarily for their own use was large enough to justify breaking out selected findings by whether the respondent made feed primarily for sale, or for his own livestock/poultry production.) The value of n was such as to cover these lists and provide some 1,500 names. The list was arranged in country number sequence during the nth name extraction.

Sample Size:

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Number in mailing sample.....	1,500	444	256	435	365
Number of usable returns.....	752	233	126	252	141
Number of unusable returns.....	8	4	-	2	2
Number of returns.....	760	237	126	254	143
Percent response.....	50.7%	53.4%	49.2%	58.4%	39.2%

Respondents replied without a tangible incentive, and, instead, furnished their own international airmail postage.

Questionnaire Design: The questionnaire - at the back of this report - was designed mainly to obtain the information felt most needed by the FEED INTERNATIONAL staff. The order, arrangement, and wording of the questions were guided by generally accepted mail survey technique.

Mailing Procedure: Computer-printed control cards containing the survey sample names and other information were numbered consecutively. Each questionnaire mailed was also numbered to match the number assigned the recipient on the control card.

The first questionnaire mailing was made from London England on August 1 1985. On August 28 a post card reminder was sent to each person on the sample list.

A follow-up questionnaire was mailed from London on October 8th, to all non-respondents.

A third questionnaire (second follow-up) identical to those in the earlier mailings was mailed to second mailing non-respondents on January 2nd 1986.

Tabulation and Report Writing: The survey returns were computer-tabulated by Analytical Computer Service Inc., Chicago. The Watt Publishin Co. Research Section wrote this report.

HIGHLIGHTS

1. Among Feed International readers who manufactured feed mainly for sale in 1984, the largest total tonnage was for (a) pigs - 77% each manufactured an average of about 36,800 tons, followed by (b) broiler feed - 81% averaged about 28,500 tons each, (c) layer feed - 82% each averaged 25,000 tons, and (d) dairy feed - 70% averaged 26,500 tons each (pages 10 - 11, 13 - 15)

2. Among those who make feed mainly for sale, the percent - 50% - who make their complete feeds by purchasing a supplement or premix and blending in other ingredients - ranges from 32% in Latin America to 60% in the Middle East and Africa; while among those making feed for their own livestock/poultry production, the percent who buy supplement or premix for their complete feed - 60% - ranges from 53% in Latin America to 69% in the Middle East/Africa. (page 20)

3. In 1984 87% of manufacturers of feed for sale made complete feed averaging about 94,900 tons each, and ranging from 49,900 tons in the Middle East/Africa region to 138,700 tons in Europe; while 94% of the feed manufacturing livestock/poultry producers made complete feed averaging 21,700 tons each, and ranging from 9,200 tons in Middle East/Africa to 41,600 tons in Latin America. (pages 21, 26, 28)

4. The additive (other than vitamins and minerals) incorporated into feed by the largest percent (81%) of readers who make feed for sale is growth promoters, followed by synthetic amino acids - 74%; anti-oxidants - 71%; medicines - 67%; mold inhibitors - 50%; feed flavors - 47%, ranging from 23% in Middle East/Africa to 65% in Europe; and pellet binders - 40%, ranging from 19% in Middle East/Africa to 61% in Europe. (page 33)

5. At survey time - fall of 1985 - computers, or computer services, were used by the plants of 76% of the feed manufacturers, ranging from 91% in Europe to only 50% in Middle East/Africa. (page 37)

(MORE)

6. In the fall of 1985 the mills of . . .

   (a) 72% of the feed manufacturers had - and 28% did not have - surplus manufacturing capacity;
   (b) 49% of the feed manufacturers were working two or three eight-hour shifts;
   (c) 53% of the feed manufacturers were operating six or seven days a week; and
   (d) 69% of the feed manufacturers needed more storage capacity for raw materials and/or finished products. (pages 30, 40 - 41)

7. Of the feed manufacturers . . .

   (a) 74% reported an average increase of 83% in their mill's feed output over five years earlier - the gains ranging from 55% in Europe to 107% in the Asia and Pacific region;
   (b) 64% expect their mill's feed production to increase (only 5% expect a decrease) in the subsequent two years, and
   (c) 45% expect to build a new plant or enlarge their present plant in the subsequent two years. (page 42)

8. Equipment bought in the preceding two years by 25% or more of the feed manufacturers included, in order, mixers, batch controllers, hammermills, screw conveyors, grain storage bins, fork lift trucks, bin level controls, bucket elevators, belt conveyors, bagging scales, truck scales and pellet coolers. And 25% or more of the feed manufacturers planned to buy in the subsequent two years most of the above equipment as well as pellet mills, quality control instrumentation, and dust control systems. (pages 45 - 48)

9. 70% of the feed manufacturers buy some or all of their major feed mill equipment from outside their own country. The equipment bought outside their country by the largest percent - 68% - of these feed manufacturers is pelleting equipment, followed by quality control equipment - 55%, grinding equipment - 51%; and process control equipment - 43%. (page 49)

FEED INTERNATIONAL BASIC MARKET SURVEY

DETAILED FINDINGS

1. READERS'* FEED BUSINESS ACTIVITIES

	Combined Areas	Europe	Middle East And Africa**	Asia (except Middle East) And Pacific**	Latin America
Respondents..	748	232	141	249	126
Percent of readers reporting:					
Feed and/or premix manufacturer.....	86%	90%	81%	88%	83%
Primarily formulator (manufacturer) of feed for SALE.....	74%	82%	64%	76%	63%
Primarily livestock or poultry producer manufacturing feed for OWN USE.....	35%	19%	52%	34%	45%
Pig producer.....	20%	15%	16%	27%	21%
Beef cattle producer.....	7%	6%	8%	6%	10%
Dairy cattle producer.....	6%	4%	7%	5%	9%
Egg producer or pullet grower.....	23%	12%	40%	21%	29%
Broiler producer.....	22%	9%	39%	20%	31%
Turkey producer.....	4%	4%	9%	1%	6%
Other.....	12%	11%	13%	14%	10%

*"Readers" refers to that portion of the August 1985 Feed International BPA Qualified circulation list classified as Feed/Pre-Mix Manufacturers Formulating Feed For Sale To Others, and Feed Mixers. The total number in these classifications was about 5,820; and the approximate geographic break-out was Europe - 1,723; Middle East and Africa - 1,053; Asia (except Middle East) and Pacific - 1,688; and Latin America - 1,356.

**For purposes of this Survey, the region designated as (1) "Middle East and Africa" comprises the 14 countries of Bahrain, Cyprus, Iran, Iraq, Israel, Jordan, Kuwait, Oman, Pakistan, Saudi Arabia, Syria, Turkey, United Arab Emirates, and Yemen, plus all of Africa; while (2) "Asia (except Middle East) and Pacific" includes the Asian mainland (except the Middle East), and islands of the Pacific Ocean.

1. (cont.)

SIZE OF LIVESTOCK AND POULTRY OPERATIONS AT SURVEY TIME

Number of PIGS In Herd

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	125	30	16*	59	20
Number of pig producers:					
10,000 or more pigs.....	25%	27%	13%	27%	30%
3,000 - 9,999 pigs.....	26%	37%	18%	27%	15%
1,000 - 2,999 pigs.....	19%	23%	13%	17%	25%
Under 1,000 pigs.....	29%	13%	56%	29%	30%
Average number of pigs in herd, per pig producer.....	10,500	14,300	5,700	9,600	9,600

Number of BEEF Cattle and Calves In Herd

Respondents.. 37

Percent of beef cattle producers reporting:

1,000 or more beef cattle & calves....	24%
300 - 999 beef cattle & calves.....	30%
100 - 299 beef cattle & calves.....	22%
Under 100 beef cattle & calves.....	24%

Average number of beef cattle & calves in herd, per beef producer..... 1,650

*Percentages and averages of this base should be viewed with more than usual caution.

1. (cont.)

Number of DAIRY Cattle and Calves In Herd

	Combined Areas
Respondents..	35
Percent of dairy cattle producers reporting:	
1,000 or more dairy cattle & calves....	11%
300 - 999 dairy cattle & calves.....	40%
100 - 299 dairy cattle & calves.....	29%
Under 100 dairy cattle & calves.....	20%
Average number of dairy cattle & calves in herd, per dairy cattle producer.....	950

Number of LAYERS and PULLETS In Flock

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	138	18*	45	44	31
Percent of egg or pullet producers reporting:					
300,000 or more layers & pullets.....	23%	33%	22%	14%	29%
100,000 - 299,999 layers & pullets....	21%	28%	13%	23%	26%
25,000 - 99,999 layers & pullets.....	28%	33%	25%	27%	32%
Under 25,000 layers & pullets.....	28%	6%	40%	36%	13%
Average number of layers & pullets in flocks, per egg or pullet producer.....	182,500	193,500	192,500	123,400	245,400

*Percentages and averages of this base should be viewed with more than usual caution.

1. (cont.)

Number of BROILERS and Broiler CHICKS In Flock

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	128	14*	43	42	29
Percent of broiler producers reporting:					
1,000,000 or more broilers & chicks....	24%	50%	16%	12%	42%
200,000 - 999,999 broilers & chicks....	23%	14%	12%	31%	31%
25,000 - 199,999 broilers & chicks.....	24%	14%	33%	24%	17%
Under 25,000 broilers & chicks.....	29%	22%	39%	33%	10%
Average number of broilers and broiler chicks in flock, per broiler producer.....	876,900	2,938,500	291,600	282,100	1,610,600

Number of TURKEYS and POULTS In Flock

Respondents..	20
Percent of turkey producers reporting:	
500,000 or more turkeys & poults.....	15%
100,000 - 499,999 turkeys & poults.....	25%
10,000 - 99,999 turkeys & poults.....	35%
Under 10,000 turkeys & poults.....	25%
Average number of turkeys and poults in flock, per turkey producer.....	178,800

*Percentages and averages of this base should be viewed with more than usual caution.

2. "Does your company or farm manufacture feed in one, or more than one, establishment?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	720	226	135	243	116
Percent of readers reporting:					
One establishment.....	56%	50%	66%	56%	55%
More than one establishment.....	38%	43%	27%	39%	42%
Do not manufacture feed, premix(es), or supplement(s).....	6%	7%	7%	5%	3%
Respondents..	242	89	32	78	43
Among companies/farms making feed in more than one establishment, percent reporting:					
7 or more establishments...	21%	28%	13%	18%	19%
4 - 6 establishments.....	26%	26%	31%	26%	23%
3 establishments.....	22%	21%	25%	20%	23%
2 establishments.....	31%	25%	31%	36%	35%
Average number of feed-making establishments reported, per company/farm having more than one.....	6.7	8.1	4.5	5.9	6.7
Average number of feed-making establishments reported, per company/farm having any.....	3.3	4.3	2.0	3.0	3.5

(a) Manufacturers Of Feed Mainly For SALE; Mainly For Own USE

Respondents..	730	212	140	246	132
Percent of feed manufacturers* reporting feed manufactured:					
Mainly for SALE.....	67%	79%	57%	68%	58%
Mainly for own livestock and/or poultry USE.....	33%	21%	43%	32%	42%

*In this report "feed manufacturers" refers to individual readers who confirmed in this survey that their companies or farms manufacture or mix feed.

3. "For which class of animals do you manufacture feed?"

	Combined Areas		Europe		Middle East And Africa		Asia (except Middle East) And Pacific		Latin America	
	Among manufacturers of feed mainly for . . .									
	Sale	Own Use	Sale	Own Use	Sale	Own Use	Sale	Own Use	Sale	Own Use
Respondents..	562	275	193	50	91	70	191	91	87	64
Percent reporting:										
Pigs	77%	46%	91%	60%	38%	26%	77%	64%	83%	31%
Beef cattle	59%	12%	87%	22%	51%	9%	35%	11%	59%	11%
Dairy cattle	70%	11%	89%	18%	56%	9%	55%	10%	75%	11%
Layers or pullets	82%	63%	81%	50%	82%	73%	86%	58%	77%	69%
Broilers	81%	57%	73%	40%	93%	76%	85%	49%	79%	61%
Turkeys	30%	6%	56%	10%	26%	9%	9%	-	18%	9%
Fish	25%	3%	20%	2%	23%	3%	31%	3%	24%	3%
Specialty feed	23%	1%	36%	-	18%	3%	14%	-	18%	3%
Pet food	24%	1%	32%	2%	18%	-	17%	-	31%	2%
Other (written in):										
Horse/Pony	7%	*	10%	*	3%	*	3%	*	11%	*
Sheep/Lamb	5%	2%	10%	-	7%	4%	1%	1%	1%	-
Rabbits	5%	*	9%	*	3%	*	2%	*	8%	*
Ducks	2%	*	2%	*	1%	*	4%	*	-	*
Goats	1%	*	1%	*	2%	*	2%	*	1%	*
Prawn	1%	*	1%	*	-	*	3%	*	1%	*
Shrimp	1%	*	-	*	-	*	1%	*	5%	*
Quail	1%	*	1%	*	-	*	2%	*	-	*
Miscellaneous*	10%	7%	12%	6%	15%	4%	7%	10%	8%	9%
	504%	212%	611%	213%	436%	219%	434%	209%	499%	212%

*Mentioned fewer than five times.

4. "Approximately how many metric tons of feed did you make in 1984 for each of the animal classes marked in question 3?"

PIG Feed Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	342	133	30	119	60
Among Manufacturers of Pig Feed Mainly For Sale, Percent Reporting:					
25,000 or more tons.....	31%	36%	10%	32%	28%
10,000 - 24,999 tons.....	20%	24%	20%	19%	10%
1,000 - 9,999 tons.....	28%	30%	33%	25%	28%
Under 1,000 tons.....	21%	10%	37%	24%	34%
Average pig feed output for SALE, per manufacturer having any.....	36,800 tons	51,500 tons	10,600 tons	34,100 tons	22,300 tons

For Own USE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	111	29	15*	50	17*
Among Manufacturers of Pig Feed Mainly For Own Use, Percent Reporting:					
25,000 or more tons.....	14%	21%	-	28%	18%
5,000 - 24,999 tons.....	23%	24%	7%	32%	23%
1,000 - 4,999 tons.....	32%	38%	40%	26%	18%
Under 1,000 tons.....	31%	17%	53%	14%	41%
Average pig feed output for own USE, per manufacturer having any.....	7,000 tons	13,500 tons	1,800 tons	9,100 tons	13,700 tons

*Percentages and averages of this base should be viewed with more than usual caution.

4. (cont.)

BEEF CATTLE Feed Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	245	119	37	51	38
Among Manufacturers of Beef Cattle Feed Mainly For Sale, Percent Reporting:					
20,000 or more tons.....	20%	22%	22%	24%	10%
5,000 - 19,999 tons.....	27%	36%	16%	20%	16%
1,000 - 4,999 tons.....	27%	23%	40%	29%	24%
Under 1,000 tons.....	26%	19%	22%	27%	50%
Average beef feed output for SALE, per manufacturer having any.....	15,300 tons	18,900 tons	16,300 tons	12,800 tons	6,100 tons

For Own USE

Respondents..	33
Among Manufacturers of Beef Cattle Feed Mainly For Their Own Use, Percent Reporting:	
1,000 or more tons.....	28%
500 - 999 tons.....	19%
100 - 499 tons.....	34%
Under 100 tons.....	19%
Average beef feed output for own USE, per manufacturer having any.....	4,500 tons

4. (cont.)

DAIRY CATTLE Feed Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	301	128	40	82	51
Among Manufactuers of Dairy Cattle Feed Mainly For Sale, Percent Reporting:					
25,000 or more tons.....	28%	34%	27%	21%	27%
5,000 - 24,999 tons.....	25%	27%	35%	18%	22%
1,000 - 4,999 tons.....	26%	23%	20%	35%	22%
Under 1,000 tons.....	21%	16%	18%	26%	29%
Average dairy feed output for SALE, per manufacturer having any.....	26,500 tons	37,000 tons	22,400 tons	17,200 tons	17,900 tons

For Own USE

Respondents..	31
Among Manufacturers of Dairy Cattle Feed Mainly For Their Own Use, Percent Reporting:	
20,000 or more tons.....	13%
1,000 - 19,999 tons.....	22%
300 - 999 tons.....	39%
Under 300 tons.....	26%
Average dairy feed output for own USE, per manufacturer having any.....	6,900 tons

4. (cont.)

LAYER AND PULLET Feed Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	362	113	63	132	54
Among Manufacturers of Layer and/or Pullet Feed Mainly For Sale, Percent Reporting:					
30,000 or more tons.....	21%	16%	25%	24%	17%
10,000 - 29,999 tons.....	25%	27%	21%	29%	19%
2,000 - 9,999 tons.....	28%	29%	29%	26%	33%
Under 2,000 tons.....	26%	28%	25%	21%	31%
Average layer and/or pullet feed output for SALE, per manufacturer having any.....	25,000 tons	25,100 tons	24,400 tons	27,938 tons	18,500 tons

For Own USE

Respondents..	148	22	42	46	38
Among Manufacturers of Layer and/or Pullet Feed Mainly For Their Own Use, Percent Reporting:					
15,000 or more.....	20%	27%	14%	17%	26%
5,000 - 14,999 tons.....	24%	32%	14%	22%	32%
1,000 - 4,999 tons.....	26%	23%	24%	30%	26%
Under 1,000 tons.....	30%	18%	48%	31%	16%
Average layer and/or pullet feed output for own USE, per manufacturer having any.....	8,700 tons	15,600 tons	5,400 tons	7,100 tons	10,300 tons

4. (cont.)

BROILER Feed Tonnage

For SALE	Combined Areas	Europe	Middle East and Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	352	101	66	128	57
Among Manufacturers of Broiler Feed Mainly For Sale, Percent Reporting:					
40,000 or more tons.....	21%	20%	15%	23%	21%
10,000 - 39,999 tons.....	28%	27%	33%	27%	26%
2,000 - 9,999 tons.....	23%	24%	26%	22%	23%
Under 2,000 tons.....	28%	29%	26%	28%	30%
Average broiler feed output for SALE, per manufacturer having any.....	28,500 tons	36,300 tons	22,300 tons	25,400 tons	28,400 tons

For Own USE

Respondents..	117	12*	41	33	31
Among Manufacturers of Broiler Feed Mainly For Their Own Use, Percent Reporting:					
40,000 or more tons.....	20%	50%	7%	6%	39%
10,000 - 39,999 tons.....	25%	16%	17%	30%	32%
1,000 - 9,999 tons.....	26%	17%	32%	30%	19%
Under 1,000 tons.....	29%	17%	44%	34%	10%
Average broiler feed output for own USE, per manufacturer having any.....	22,500 tons	36,400 tons	8,300 tons	10,200 tons	49,000 tons

*Percentages and averages of this base should be viewed with more than usual caution.

4. (cont.)

TURKEY Feed Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	107	70	18*	12*	7**
Among Manufacturers of Turkey Feed Mainly For Sale, Percent Reporting:					
10,000 or more tons.....	18%	17%	22%	25%	-
2,000 - 9,999 tons.....	26%	27%	28%	8%	43%
500 - 1,999 tons.....	26%	27%	17%	42%	14%
Under 500 tons.....	30%	29%	33%	25%	43%
Average turkey feed output for SALE, per manufacturer having any.....	12,600 tons	15,300 tons	11,200 tons	5,100 tons	1,800 tons

For Own USE

Respondents..	18*
Among Manufacturers of Turkey Feed Mainly For Their Own Use, Percent Reporting:	
5,000 or more tons.....	16%
500 - 4,999 tons.....	28%
100 - 499 tons.....	28%
Under 100 tons.....	28%
Average turkey feed output for own USE, per manufacturer having any.....	2,700 tons

*Percentages and averages of this base should be viewed with more than ordinary caution.
**Percentages and averages of this base are not projectable.

4. (cont.)

FISH Feed Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	83	15*	16*	40	12*
Among Manufacturers of Fish Feed Mainly For Sale, Percent Reporting:					
5,000 or more tons.....	17%	20%	19%	20%	-
500 - 4,999 tons.....	28%	33%	6%	32%	33%
100 - 499 tons.....	26%	20%	37%	28%	17%
Under 100 tons.....	29%	27%	38%	20%	50%
Average fish feed output for SALE, per manufacturer having any.....	3,300 tons	11,355 tons	1,300 tons	1,900 tons	500 tons

SPECIALTY Feed Tonnage

For SALE

Respondents..	73	36	9**	18*	10*
Among Manufacturers of Specialty Feed Mainly For Sale, Percent Reporting:					
5,000 or more tons.....	19%	28%	-	16%	10%
1,000 - 4,999 tons.....	36%	31%	45%	39%	40%
200 - 999 tons.....	20%	19%	22%	28%	10%
Under 200 tons.....	25%	22%	33%	17%	40%
Average specialty feed output for SALE, per manufacturer having any.....	3,000 tons	4,100 tons	1,200 tons	2,300 tons	1,700 tons

*Percentages and averages of this base should be viewed with more than usual caution.
**Percentages and averages of this base are not projectable.

4. (cont.)

PET FOOD Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	85	39	12*	14*	20
Among Manufacturers of Pet Food Mainly For Sale, Percent Reporting:					
10,000 or more tons.....	15%	18%	17%	-	20%
1,000 - 9,999 tons.....	26%	31%	33%	14%	20%
200 - 999 tons.....	26%	20%	17%	43%	30%
Under 200 tons.....	33%	31%	33%	43%	30%
Average pet food output for SALE, per manufacturer having any.....	4,100 tons	5,100 tons	3,000 tons	400 tons	5,100 tons

*Percentages and averages of this base should be viewed with more than usual caution.

4. (cont.)

OTHER Feed Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	114	41	16*	38	19*
Among Manufacturers of Other Feed Mainly For Sale, Percent Reporting:					
10,000 or more tons.....	22%	27%	19%	18%	21%
3,000 - 9,999 tons.....	21%	19%	31%	16%	26%
500 - 2,999 tons.....	30%	34%	25%	29%	26%
Under 500 tons.....	27%	20%	25%	37%	27%
Average other feed output for SALE, per manufacturer having any.....	6,900 tons	9,000 tons	6,500 tons	1,100 tons	4,200 tons

For Own USE

Respondents..	25
Among Manufacturers of Other Feed Mainly For Their Own Use, Percent Reporting:	
10,000 or more tons.....	16%
1,000 - 9,999 tons.....	28%
200 - 999 tons.....	32%
Under 200 tons.....	24%
Average other feed output for own USE, per manufacturer having any.....	3,800 tons

*Percentages and averages of this base should be viewed with more than usual caution.

4. (cont.)

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Average TOTAL feed output for SALE, per manufacturer having any.....	108,000 tons	161,100 tons	71,600 tons	87,200 tons	76,000 tons
Average TOTAL feed output for own USE, per manufacturer having any.....	30,300 tons				

5. "How do you manufacture your complete feeds, if any?"

	Combined Areas		Europe		Middle East And Africa		Asia (except Middle East) And Pacific		Latin America	
	Among manufacturers of feed mainly for . . .									
	Sale	Own Use	Sale	Own Use	Sale	Own Use	Sale	Own Use	Sale	Own Use
Respondents..	501	252	165	46	85	64	174	89	77	53
Percent reporting:										
From the beginning, starting with manufacturing our own premix(es).....	54%	42%	52%	39%	44%	34%	54%	43%	70%	51%
By purchasing a supplement or premix, and blending in our other ingredients...	50%	60%	56%	63%	60%	69%	47%	57%	32%	53%
Other.....	4%	2%	4%	2%	6%	2%	2%	3%	3%	-

6. "Approximately how many metric tons of feed did you make in 1984 of each type shown below?"

COMPLETE FEED Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	386	120	70	142	54
Among Manufacturers of Complete Feed Mainly For Sale, Percent Reporting:					
200,000 or more tons.....	12%	15%	7%	11%	11%
50,000 - 199,999 tons.....	29%	33%	19%	30%	35%
10,000 - 49,999 tons.....	29%	29%	37%	26%	26%
Under 10,000 tons.....	30%	23%	37%	33%	28%
Average complete feed output for SALE, per manufacturer having any.....	94,900 tons	138,700 tons	49,900 tons	86,400 tons	78,500 tons

For Own USE					
Respondents..	197	32	50	67	48
Among Manufacturers of Complete Feed Mainly For Their Own Use, Percent Reporting:					
25,000 or more tons.....	25%	31%	14%	22%	35%
5,000 - 24,999 tons.....	27%	22%	22%	25%	37%
1,000 - 4,999 tons.....	27%	31%	30%	33%	15%
Under 1,000 tons.....	21%	16%	34%	20%	13%
Average complete feed output for own USE, per manufacturer having any.....	21,700 tons	25,700 tons	9,200 tons	14,700 tons	41,600 tons

6. (cont.)

FEED SUPPLEMENT OR CONCENTRATE Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	154	69	26	35	24
Among Manufacturers of Feed Supplement or Concentrate Mainly For Sale, Percent Reporting:					
25,000 or more tons.....	20%	22%	35%	14%	8%
5,000 - 24,999 tons.....	30%	38%	27%	26%	21%
1,000 - 4,999 tons.....	21%	23%	19%	20%	17%
Under 1,000 tons.....	29%	17%	19%	40%	54%
Average feed supplement or concentrate output for SALE, per manufacturer having any..	19,500 tons	27,600 tons	20,900 tons	10,100 tons	8,100 tons

For Own USE

Respondents..	18*
Among Manufacturers of Feed Supplement or Concentrate Mainly For Their Own Use, Percent Reporting:	
1,000 or more tons.....	28%
200 - 999 tons.....	28%
50 - 199 tons.....	22%
Under 50 tons.....	22%
Average feed supplement or concentrate output for own USE, per manufacturer having any...	1,400 tons

*Percentages and averages of this base should be viewed with more than usual caution.

6. (cont.)

SUPER CONCENTRATE OR BASEMIX Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	50	24	11*	10*	5**
Among Manufacturers of Super Concentrate or Basemix Mainly For Sale, Percent Reporting:					
10,000 or more tons.....	18%	21%	18%	10%	20%
3,000 - 9,999 tons.....	26%	29%	27%	30%	-
500 - 2,999 tons.....	30%	29%	46%	10%	40%
Under 500 tons.....	26%	21%	9%	50%	40%
Average superconcentrate or basemix output for SALE, per manufacturer having any.....	5,000 tons	6,900 tons	4,500 tons	2,400 tons	2,600 tons

*Percentages and averages of this base should be viewed with more than usual caution.
**Percentages and averages of this base are not projectable.

6. (cont.)

FEED PREMIX OR MICROINGREDIENT PACKAGE Tonnage

For SALE	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	85	33	14*	24	14*
Among Manufacturers of Feed Premix or Microingredient Package Mainly For Sale, Percent Reporting:					
4,000 or more tons.....	20%	40%	7%	4%	14%
1,000 - 3,999 tons.....	27%	27%	43%	21%	21%
200 - 999 tons.....	28%	24%	21%	33%	36%
Under 200 tons.....	25%	9%	29%	42%	29%
Average feed premix or microingredient package output for SALE, per manufacturer having any.....	5,200 tons	9,500 tons	6,600 tons	700 tons	1,200 tons

For Own USE

Respondents..	25
Among Manufacturers of Feed Premix or Microingredient Package Mainly For Their Own Use, Percent Reporting:	
5,000 or more tons.....	12%
500 - 4,999 tons.....	40%
100 - 499 tons.....	24%
Under 100 tons.....	24%
Average feed premix or microingredient package output for own USE, per manufacturer having any.....	1,700 tons

*Percentages and averages of this base should be viewed with more than usual caution.

6. (cont.)

OTHER Feed Tonnage

For SALE — Combined Areas

Respondents.. 17*

Among Manufacturers of Other Feed Mainly For Sale, Percent Reporting:

30,000 or more tons	23%
5,000 - 29,999 tons	24%
1,000 - 4,999 tons	29%
Under 1,000 tons	24%

Average other feed output for SALE, per manufacturer having any..... 14,500 tons

*Percentages and averages of this base should be viewed with more than usual caution.

7. FEED ITEMS MANUFACTURED FOR SALE

COMBINED AREAS

	Among Manufacturers of Feed Mainly For SALE, Percent Reporting . . .					
	Pig Feed	Beef Feed	Dairy Feed	Poultry Feed	Other Feed	ANY
Respondents..			571			
Complete feed.....	63%	43%	53%	72%	35%	87%
Feed supplement or concentrate.....	30%	20%	22%	27%	8%	41%
Super concentrate or basemix.....	11%	7%	8%	11%	3%	16%
Feed premix or microingredient package...	18%	12%	14%	19%	8%	24%
Other.....	1%	1%	2%	1%	2%	4%

EUROPE

Respondents..			181			
Complete feed.....	80%	70%	71%	67%	47%	87%
Feed supplement or concentrate.....	46%	41%	41%	33%	14%	56%
Super concentrate or basemix.....	20%	17%	17%	14%	7%	24%
Feed premix or microingredient package...	26%	23%	24%	24%	14%	28%
Other.....	2%	2%	2%	2%	2%	4%

MIDDLE EAST AND AFRICA

Respondents..			103			
Complete feed.....	32%	38%	44%	83%	28%	92%
Feed supplement or concentrate.....	16%	16%	13%	21%	7%	31%
Super concentrate or basemix.....	6%	6%	7%	11%	3%	15%
Feed premix or microingredient package...	7%	7%	7%	15%	2%	20%
Other.....	-	1%	-	-	1%	3%

7. (cont.)

ASIA (EXCEPT MIDDLE EAST) AND PACIFIC

	Among Manufacturers of Feed Mainly For SALE, Percent Reporting . . .					
	Pig Feed	Beef Feed	Dairy Feed	Poultry Feed	Other Feed	ANY
Respondents..			201			
Complete feed.....	63%	24%	40%	77%	28%	88%
Feed supplement or concentrate.....	24%	4%	10%	27%	5%	35%
Super concentrate or basemix.....	7%	1%	1%	8%	1%	11%
Feed premix or microingredient package...	15%	3%	5%	17%	4%	20%
Other.....	*	1%	1%	*	2%	2%

*Less than 0.5%.

LATIN AMERICA

Respondents..			86			
Complete feed.....	62%	38%	56%	60%	33%	78%
Feed supplement or concentrate.....	27%	15%	22%	23%	5%	37%
Super concentrate or basemix.....	8%	1%	5%	9%	-	13%
Feed premix or microingredient package...	20%	13%	20%	19%	9%	27%
Other.....	1%	1%	5%	1%	-	7%

8. FEED ITEMS MANUFACTURED FOR OWN USE

COMBINED AREAS

	Among Manufacturers of Feed Mainly For Own USE, Percent Reporting . . .					
	Pig Feed	Beef Feed	Dairy Feed	Poultry Feed	Other Feed	ANY
Respondents..			321			
Complete feed	44%	12%	10%	70%	10%	94%
Feed supplement or concentrate	5%	1%	2%	9%	2%	12%
Super concentrate or basemix	2%	2%	2%	3%	1%	6%
Feed premix or microingredient package	9%	4%	5%	14%	3%	16%
Other	*	1%	1%	-	1%	3%

.. *Less than 0.5%.

EUROPE

Respondents..			55			
Complete feed	58%	29%	20%	60%	9%	89%
Feed supplement or concentrate	5%	4%	5%	5%	4%	9%
Super concentrate or basemix	5%	5%	7%	4%	5%	7%
Feed premix or microingredient package	15%	11%	11%	15%	5%	18%
Other	-	-	-	-	-	-

MIDDLE EAST AND AFRICA

Respondents..			79			
Complete feed	23%	9%	9%	81%	9%	99%
Feed supplement or concentrate	1%	1%	3%	13%	1%	15%
Super concentrate or basemix	1%	3%	3%	5%	-	9%
Feed premix or microingredient package	4%	1%	4%	13%	4%	16%
Other	-	1%	1%	-	1%	4%

8. (cont.)

ASIA (EXCEPT MIDDLE EAST) AND PACIFIC

	Among Manufacturers of Feed Mainly For Own USE, Percent Reporting . . .					
	Pig Feed	Beef Feed	Dairy Feed	Poultry Feed	Other Feed	ANY
Respondents..			118			
Complete feed	58%	7%	8%	63%	11%	94%
Feed supplement or concentrate	8%	-	2%	10%	3%	13%
Super concentrate or basemix	3%	-	-	3%	-	4%
Feed premix or microingredient package	10%	3%	2%	13%	3%	14%
Other	1%	1%	-	-	3%	4%

LATIN AMERICA

Respondents..			69			
Complete feed	33%	10%	4%	77%	9%	94%
Feed supplement or concentrate	3%	1%	-	7%	-	9%
Super concentrate or basemix	1%	-	-	3%	1%	4%
Feed premix or microingredient package	9%	4%	7%	16%	1%	19%
Other	-	-	1%	-	-	1%

9. "Does your feed mill have surplus manufacturing capacity?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	648	199	119	221	109
Percent of feed manufacturers answering:					
Yes...	72%	69%	75%	67%	83%
No....	28%	31%	25%	33%	17%
(a) "If 'yes,' at about what percent of capacity does your mill operate now?"					
Respondents..	426	127	84	132	83
Average mill operating rate at survey time of feed manufacturers with surplus capacity.....	60%	64%	52%	58%	62%

10. "In what form(s) is your feed manufactured?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	678	213	122	229	114
Percent of feed manufacturers reporting:					
Meal.....	87%	89%	90%	84%	87%
Crumbles.....	42%	49%	30%	46%	35%
Pellets.....	64%	79%	46%	62%	60%
Cubes.....	12%	27%	10%	3%	3%
Extruded.....	8%	12%	5%	7%	5%
Blocks.....	6%	12%	5%	1%	3%
Liquid feed.....	3%	4%	2%	3%	4%
Milk replacer.....	11%	23%	3%	7%	9%
Other.....	5%	6%	6%	4%	4%

11. HOW READERS DISPOSE OF THEIR FEED - RANKED BY THEIR 1984 TONNAGE

COMBINED AREAS

Percent of (500 answering) feed manufacturers reporting:	RANK 1	2	3	4	Any Rank
We sell through a dealer organization..	35%	25%	6%	-	66%
We sell direct to farmers.....	38%	37%	3%	*	78%
We feed our own animals.....	25%	9%	8%	*	42%
Other.....	2%	1%	1%	*	4%

*Less than 0.5%.

EUROPE

Percent of (157 answering) feed manufacturers reporting:					
We sell through a dealer organization..	33%	29%	4%	-	66%
We sell direct to farmers.....	53%	29%	1%	-	83%
We feed our own animals.....	11%	8%	4%	-	23%
Other.....	3%	-	-	-	3%

MIDDLE EAST AND AFRICA

Percent of (73 answering) feed manufacturers reporting:					
We sell through a dealer organization..	23%	25%	8%	-	56%
We sell direct to farmers.....	41%	40%	4%	-	85%
We feed our own animals.....	33%	14%	8%	1%	56%
Other.....	3%	3%	3%	1%	10%

11. (cont.)

ASIA (EXCEPT MIDDLE EAST) AND PACIFIC

Percent of (191 answering) feed manufacturers reporting:	RANK 1	2	3	4	Any Rank
We sell through a dealer organization..	49%	20%	5%	-	74%
We sell direct to farmers.....	27%	46%	3%	1%	77%
We feed our own animals.....	24%	9%	13%	-	46%
Other.....	1%	1%	1%	-	3%

LATIN AMERICA

Percent of (79 answering) feed manufacturers reporting:					
We sell through a dealer organization..	19%	28%	6%	-	53%
We sell direct to farmers.....	35%	30%	3%	-	68%
We feed our own animals.....	46%	6%	3%	-	55%
Other.....	-	3%	-	-	3%

12. "What additives other than vitamins and minerals are you currently incorporating into your feed?"

	Combined Areas		Europe		Middle East And Africa		Asia (except Middle East) And Pacific		Latin America	
	Among manufacturers of feed mainly for . . .									
	Sale	Own Use	Sale	Own Use	Sale	Own Use	Sale	Own Use	Sale	Own Use
Respondents..	526	256	173	41	86	68	185	89	82	58
Percent reporting:										
Medicines.....	67%	68%	60%	49%	70%	66%	69%	75%	73%	74%
Growth promoters (including antibiotics, hormones, probiotics, or others)....	81%	75%	86%	63%	71%	63%	86%	87%	72%	81%
Anti-oxidants.....	71%	56%	75%	56%	72%	51%	65%	51%	74%	69%
Mold inhibitors.....	50%	38%	56%	32%	33%	24%	50%	40%	56%	55%
Synthetic amino acids.....	74%	61%	76%	61%	62%	46%	78%	65%	76%	72%
Pellet binders.....	40%	17%	61%	34%	19%	6%	33%	18%	34%	16%
Feed flavors.....	47%	20%	65%	29%	23%	13%	44%	27%	44%	9%
Other.....	3%	4%	3%	2%	9%	10%	1%	-	1%	5%
None.....	3%	4%	4%	10%	1%	6%	2%	2%	2%	2%

13. "How do you deliver your feed?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	675	213	125	225	112
Percent of feed manufacturers reporting:					
Use our own trucks.....	68%	70%	63%	68%	70%
Use leased trucks.....	41%	45%	28%	44%	44%
(Either or both of above).....	(84%)	(86%)	(78%)	(83%)	(86%)
Picked up by customer.....	50%	50%	45%	50%	54%
Conveyed from mill directly to nearby animals.....	8%	7%	15%	7%	5%
Other.....	6%	7%	7%	7%	3%

13 (cont.)

"If you deliver feed in your own, or leased, trucks . . ."

(a) "About how many trucks do you own or lease?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	454	132	84	160	78
Percent of feed manufacturers reporting:					
15 or more trucks.....	26%	38%	23%	22%	17%
6 - 14 trucks.....	26%	29%	13%	22%	40%
3 - 5 trucks.....	27%	23%	33%	33%	18%
1 or 2 trucks.....	21%	10%	31%	23%	25%
Average number of trucks, per feed manufacturer owning or leasing any.....	12 trucks	18 trucks	9 trucks	10 trucks	9 trucks

(b) "Are your feed delivery trucks equipped with a pneumatic, or a mechanical system?

Respondents..	443	155	78	140	70
Among feed manufacturers who deliver feed in their own, or leased, trucks, percent reporting:					
Mostly pneumatic.....	32%	63%	17%	14%	16%
Mostly mechanical.....	41%	22%	47%	49%	61%
Use both about equally.....	12%	13%	14%	12%	4%
Other.....	15%	2%	22%	25%	19%

14. "About what percent of your finished feed is delivered in bags, in bulk?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	512	172	88	175	77
Of feed tonnage made mainly for SALE, average percent delivered:					
In Bags.....	68%	41%	81%	83%	79%
In Bulk.....	31%	59%	19%	15%	19%
Other.....	1%	*	*	2%	2%
Respondents..	242	40	64	86	52
Of feed tonnage made mainly for own USE, average percent delivered:					
In Bags.....	56%	19%	66%	74%	42%
In Bulk.....	42%	78%	33%	26%	53%
Other.....	2%	3%	1%	-	5%

*Less than 0.5%.

15. "Does your feed manufacturing plant use a computer, or computer services?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	679	212	123	231	113
Percent of feed manufacturers answering:					
Yes.....	76%	91%	50%	71%	85%
No.....	24%	9%	50%	29%	15%
(a) "If 'yes,' for which function(s) do you use the computer?"					
Respondents..	507	188	60	164	95
Among feed manufacturers whose plant uses a computer or computer services, percent reporting:					
Least cost formulation.....	91%	90%	83%	93%	95%
Manufacturing process control...	55%	69%	50%	54%	29%
Inventory control.....	59%	56%	52%	57%	74%
Invoicing.....	51%	68%	37%	45%	41%
Payroll.....	46%	54%	28%	43%	43%
Customer or sales analysis.....	47%	59%	27%	43%	40%
Market research.....	18%	23%	15%	14%	16%
Purchasing.....	27%	35%	18%	29%	15%
Truck fleet management.....	9%	14%	12%	4%	6%
Other.....	5%	5%	5%	4%	5%

16. "Do you now have facilities for analyzing feeds at your location?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East And Pacific	Latin America
Respondents..	663	206	119	226	112
Percent of feed manufacturers answering:					
Yes...	71%	72%	53%	75%	83%
No....	29%	28%	47%	25%	17%

(a) "Do you routinely use an outside laboratory for analyzing feed?"

Respondents..	591	192	107	194	98
Percent of feed manufacturers answering:					
Yes...	66%	68%	66%	62%	66%
No....	34%	32%	34%	38%	34%

17. "About how often do you sample and check your finished feed for nutrient composition?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	670	204	125	228	113
Percent of feed manufacturers reporting:					
Each batch.....	34%	35%	26%	44%	25%
Daily.....	28%	36%	19%	23%	35%
Monthly.....	21%	21%	30%	16%	22%
Twice a year.....	8%	4%	12%	8%	10%
Never.....	2%	1%	3%	1%	2%
Other.....	7%	3%	10%	8%	7%

18. "Where does the RAW MATERIAL (grain, cereals, etc.) for your feed production come from?"

Respondents..	420	127	79	144	70
Average percent produced within 50 KM (30 miles) of feed mill.....	44%	40%	51%	45%	43%
Respondents..	517	144	97	189	87
Average percent supplied from within feed manufacturer's country.....	62%	57%	60%	64%	68%

19. "Do you need more storage capacity for your feed raw materials; finished feed products?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	601	177	108	212	104
Percent of feed manufacturers reporting:					
Need more storage capacity for . . .					
Raw materials only.....	28%	20%	37%	31%	29%
Finished products only.....	9%	13%	4%	6%	10%
Both.....	32%	34%	30%	35%	24%
Neither one.....	31%	33%	29%	28%	37%

20. "How are raw materials transported to your feed mill?"

Respondents..	662	208	120	227	107
Percent of feed manufacturers reporting:					
Barge.....	11%	18%	4%	11%	7%
Truck.....	95%	96%	91%	96%	92%
Railroad.....	23%	24%	22%	22%	24%
Other.....	6%	8%	6%	5%	5%

21. "How many shifts (8-hour work turns) does your feed mill have now?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	664	204	122	227	111
Percent of feed manufacturers reporting:					
One.....	48%	34%	60%	53%	52%
Two.....	31%	36%	25%	33%	25%
Three....	18%	26%	11%	13%	20%
Other....	3%	4%	4%	1%	3%

(a) "How many days per week does your feed mill operate now?"

Respondents..	665	205	121	227	112
Percent of feed manufacturers reporting:					
Less than 5..	7%	5%	8%	9%	5%
5.....	38%	64%	31%	18%	40%
6.....	47%	27%	54%	62%	47%
7.....	6%	3%	5%	10%	7%
Other.....	2%	1%	2%	1%	1%

22. "Is your mill's feed output greater now than it was five years ago?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	644	203	120	216	105
Percent of feed manufacturers answering "Yes".....	74%	76%	66%	77%	72%
(a) "If 'yes,' about how much did your output increase?"					
Respondents..	406	120	72	145	69
Average growth in feed mill output among manufacturers reporting an increase.....	83%	55%	85%	107%	81%

23. "Do you expect your mill's feed production to increase, decrease, or stay the same in the next two years?"

Respondents..	666	206	120	229	111
Percent of feed manufacturers reporting:					
Increase.....	64%	57%	69%	65%	71%
Decrease.....	5%	7%	3%	4%	2%
Stay the same.....	31%	36%	28%	31%	27%

24. "Do you expect to build a new feed plant or enlarge your present plant in the next two years?"

Respondents..	657	199	120	225	113
Percent of feed manufacturers answering "Yes".....	45%	31%	48%	51%	54%

25. TYPE OF FEED MILL EQUIPMENT THAT FEED MANUFACTURERS . . . HAVE NOW; BOUGHT IN THE PRECEDING TWO YEARS; AND PLAN TO BUY IN THE SUBSEQUENT TWO YEARS.

(a) HAVE NOW

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	548	147	107	201	93
Percent of feed manufacturers reporting:					
Truck scale(s).....	58%	62%	56%	54%	63%
Fork lift trucks.....	49%	74%	37%	46%	29%
Turnhead distributor(s).....	24%	22%	17%	21%	43%
Grain storage bins.....	61%	71%	60%	52%	66%
Bin level control(s).....	43%	56%	38%	41%	33%
Scalper(s), screener(s).....	39%	39%	33%	42%	42%
Belt conveyor(s).....	55%	61%	52%	53%	51%
Bucket elevator(s).....	65%	69%	55%	65%	71%
Drag flight conveyor(s).....	27%	36%	19%	27%	20%
Pneumatic conveyor(s).....	32%	46%	29%	28%	22%
Screw conveyor(s).....	63%	66%	57%	63%	62%
Portable grain auger(s).....	23%	19%	30%	18%	33%
Grain drier(s).....	20%	20%	12%	13%	42%
Attrition mill(s) (plate).....	5%	5%	5%	4%	6%
Flaking mill(s).....	6%	11%	2%	6%	5%
Hammermill(s).....	83%	83%	83%	86%	76%
Roller mill(s).....	23%	22%	21%	24%	23%
Turbo mill(s), fine grind.....	6%	6%	3%	8%	4%
Hay shredder(s).....	4%	3%	7%	2%	3%
Batch controller(s).....	70%	73%	67%	68%	46%
Manual.....	23%	18%	21%	27%	23%
Semi-automatic.....	19%	12%	25%	16%	31%
Automatic - not computerized	15%	18%	14%	13%	17%
Computer.....	27%	41%	22%	24%	18%

(table continued)

25. HAVE NOW (cont.)

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Mixer(s)	89%	91%	86%	90%	89%
Continuous, volumetric	11%	16%	12%	7%	9%
Horizontal paddle	25%	34%	24%	20%	24%
Horizontal ribbon	41%	39%	27%	49%	46%
Rotary	10%	17%	7%	7%	9%
Vertical	32%	24%	36%	36%	31%
Fat applicator(s)	40%	59%	25%	35%	39%
Liquid supplement mixer(s)	30%	41%	23%	26%	28%
Microingredient blender(s)	33%	29%	24%	33%	46%
Pellet mill(s)	53%	65%	44%	49%	51%
Cooker/extruder(s)	13%	20%	7%	11%	12%
Pellet cooler(s)	53%	67%	43%	51%	51%
Bagging scale(s)	62%	64%	58%	65%	59%
Bag closer(s)	60%	63%	59%	59%	60%
Quality control instrumentation	38%	44%	28%	36%	45%
Dust control system	48%	56%	39%	51%	37%
Boiler	49%	52%	38%	50%	52%
Bulk truck body(ies)	29%	38%	30%	23%	28%

25. (cont.)

BOUGHT IN THE PRECEDING TWO YEARS

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	284	82	57	92	53
Percent of feed manufacturers reporting:					
Truck scale(s).....	27%	27%	33%	28%	21%
Fork lift trucks.....	32%	46%	23%	35%	13%
Turnhead distributor(s).....	12%	7%	11%	13%	17%
Grain storage bins.....	34%	32%	37%	35%	32%
Bin level control(s).....	32%	40%	32%	28%	26%
Scalper(s), screener(s).....	20%	17%	18%	26%	19%
Belt conveyor(s).....	29%	26%	35%	29%	26%
Bucket elevator(s).....	32%	32%	28%	35%	34%
Drag flight conveyor(s).....	19%	23%	11%	18%	21%
Pneumatic conveyor(s).....	11%	13%	9%	10%	11%
Screw conveyor(s).....	35%	34%	33%	37%	32%
Portable grain auger(s).....	12%	5%	21%	9%	17%
Grain drier(s).....	8%	7%	7%	5%	15%
Attrition mill(s) (plate).....	2%	1%	4%	2%	4%
Flaking mill(s).....	3%	2%	-	5%	2%
Hammermill(s).....	37%	24%	42%	46%	38%
Roller mill(s).....	12%	5%	12%	15%	17%
Turbo mill(s), fine grind.....	2%	1%	4%	3%	2%
Hay shredder(s).....	1%	1%	2%	-	-
Batch controller(s).....	41%	34%	39%	49%	40%
Manual.....	10%	4%	18%	12%	8%
Semi-automatic.....	8%	6%	5%	12%	9%
Automatic - not computerized	6%	5%	4%	8%	9%
Computer.....	23%	28%	16%	27%	17%

(table continued)

25. BOUGHT IN THE PRECEDING TWO YEARS (cont.)

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Mixer(s)	42%	29%	39%	47%	58%
Continuous, volumetric	6%	9%	5%	3%	8%
Horizontal paddle	9%	5%	11%	11%	11%
Horizontal ribbon	18%	21%	9%	21%	17%
Rotary	4%	5%	4%	2%	6%
Vertical	16%	2%	19%	22%	23%
Fat applicator(s)	18%	20%	12%	18%	23%
Liquid supplement mixer(s)	16%	17%	12%	15%	21%
Microingredient blender(s)	13%	10%	7%	14%	21%
Pellet mill(s)	24%	29%	16%	28%	19%
Cooker/extruder(s)	7%	7%	11%	4%	8%
Pellet cooler(s)	26%	35%	12%	30%	21%
Bagging scale(s)	29%	24%	25%	38%	25%
Bag closer(s)	24%	21%	25%	27%	25%
Quality control instrumentation	20%	20%	16%	20%	26%
Dust control system	19%	17%	14%	27%	13%
Boiler	20%	17%	19%	25%	19%
Bulk truck body(ies)	16%	23%	16%	12%	11%

25. (cont.)

PLAN TO BUY IN THE SUBSEQUENT TWO YEARS

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	295	69	70	95	61
Percent of feed manufacturers reporting:					
Truck scale(s).....	22%	22%	27%	20%	18%
Fork lift trucks.....	26%	33%	30%	21%	20%
Turnhead distributor(s).....	11%	7%	9%	11%	20%
Grain storage bins.....	35%	22%	44%	27%	49%
Bin level control(s).....	27%	23%	34%	23%	31%
Scalper(s), screener(s).....	12%	9%	10%	15%	13%
Belt conveyor(s).....	20%	20%	24%	16%	21%
Bucket elevator(s).....	25%	26%	24%	23%	26%
Drag flight conveyor(s).....	13%	13%	10%	16%	11%
Pneumatic conveyor(s).....	13%	13%	13%	13%	11%
Screw conveyor(s).....	21%	20%	20%	20%	26%
Portable grain auger(s).....	7%	4%	17%	2%	8%
Grain drier(s).....	17%	7%	21%	17%	21%
Attrition mill(s) (plate).....	1%	--	1%	1%	3%
Flaking mill(s).....	6%	4%	9%	7%	5%
Hammermill(s).....	29%	28%	26%	33%	31%
Roller mill(s).....	9%	7%	10%	11%	8%
Turbo mill(s), fine grind.....	4%	1%	3%	7%	3%
Hay shredder(s).....	5%	6%	9%	2%	5%
Batch controller(s).....	39%	33%	37%	42%	44%
Manual.....	4%	-	6%	3%	8%
Semi-automatic.....	5%	-	9%	6%	7%
Automatic - not computerized	6%	4%	6%	11%	3%
Computer.....	27%	30%	27%	26%	25%

(table continued)

25. PLAN TO BUY IN THE SUBSEQUENT TWO YEARS (cont.)

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Mixer(s)	34%	28%	40%	36%	33%
Continuous, volumetric	5%	4%	9%	5%	2%
Horizontal paddle	9%	4%	11%	14%	7%
Horizontal ribbon	16%	12%	16%	18%	18%
Rotary	3%	1%	6%	3%	3%
Vertical	4%	3%	7%	1%	7%
Fat applicator(s)	17%	19%	14%	16%	20%
Liquid supplement mixer(s)	19%	20%	19%	17%	20%
Microingredient blender(s)	17%	14%	17%	18%	16%
Pellet mill(s)	28%	28%	33%	21%	36%
Cooker/extruder(s)	20%	17%	16%	24%	23%
Pellet cooler(s)	25%	26%	31%	17%	28%
Bagging scale(s)	21%	14%	30%	20%	21%
Bag closer(s)	20%	19%	26%	18%	20%
Quality control instrumentation	31%	30%	34%	23%	39%
Dust control system	25%	17%	33%	23%	26%
Boiler	13%	13%	14%	12%	13%
Bulk truck body(ies)	17%	25%	27%	6%	11%

26. "Do you buy your major feed mill equipment from within your own country, from outside your country, or from both?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	668	201	124	231	112
Percent of feed manufacturers reporting:					
Buy within my own country.....	30%	33%	25%	36%	20%
Buy from outside my country.....	21%	9%	36%	16%	34%
Buy both from within and outside my country.....	49%	58%	39%	48%	46%

(a) "If you buy any major equipment from outside your own country, which type(s)?"

Respondents..	410	104	88	138	80
Among feed manufacturers who buy major feed mill equipment from outside their country, percent reporting:					
Quality control equipment.....	55%	44%	48%	62%	65%
Grinding equipment.....	51%	44%	67%	51%	43%
Pelleting equipment.....	68%	65%	69%	71%	66%
Raw material/finished product..	30%	26%	41%	30%	26%
Transportation equipment.....	27%	27%	36%	25%	20%
Process control equipment.....	43%	43%	42%	42%	45%
Conveying equipment.....	30%	19%	46%	33%	24%
Other.....	11%	13%	11%	7%	15%

27. "Are advertisements in feed industry magazines important sources of information when you are planning to buy major feed plant equipment or supplies?"

	Combined Areas	Europe	Middle East And Africa	Asia (except Middle East) And Pacific	Latin America
Respondents..	645	189	119	227	110
Percent of feed manufacturers reporting:					
Very important.....	46%	25%	52%	45%	75%
Of some importance...	48%	65%	42%	50%	23%
Not important.....	6%	10%	6%	5%	2%

28. "Which of the following feed-related exhibitions (fairs) did you visit in the last three years?"

Respondents..	629	201	114	210	104
Percent of feed manufacturers reporting:					
AFMA.....	5%	4%	2%	3%	16%
AgAsia	4%	2%	1%	10%	-
FeedTech.....	7%	14%	4%	4%	1%
Huhn and Schwein.....	19%	39%	19%	6%	5%
PowTech.....	2%	6%	-	-	-
SIMA.....	7%	19%	4%	-	2%
Southeastern International Poultry Trade Show.....	12%	3%	14%	9%	33%
Victam.....	18%	48%	7%	3%	3%
VIV.....	10%	22%	6%	4%	2%
(Any of the above).....	(47%)	(75%)	(37%)	(27%)	(44%)

EDITOR'S GUIDE

CONFIDENTIAL INFORMATION
To help improve FEED INTERNATIONAL

The confidential information you give here is vitally important to me in making future issues of FEED INTERNATIONAL still more useful to you.
Charles Olentine, Editor

Note: If this company has more than one feed manufacturing establishment, please answer only for the feed plant where you spend the largest part of your feed mill time.

START HERE

1. Please mark **each** of the following items that help describe your, or your company's, feed business activities.

- ☐ Feed and/or premix manufacturer
- ☐ Primarily formulator (manufacturer) of feed for **sale**
- ☐ Primarily livestock or poultry producer manufacturing feed for **own use**
- ☐ Pig producer _____ (number of pigs in herd now)
- ☐ Beef cattle producer _____ (number of beef cattle & calves in herd now)
- ☐ Dairy cattle producer _____ (number of dairy cattle & calves in herd now)
- ☐ Egg producer or pullet grower _____ (number of layers & pullets in flock now)
- ☐ Broiler producer _____ (number of broilers & chicks in flock now)
- ☐ Turkey producer _____ (number of turkeys & poults in flock now)
- ☐ Other (please specify) _____

2. Does your company or farm manufacture feed in one or more than one establishment? (please mark)

- ☐ One establishment
- ☐ More than one establishment _____ (number of feed establishments)
- ☐ Do not manufacture feed, premix(es), or supplement(s)

If your company or farm does **not** manufacture any feed, premix(es) or supplement(s), please mark here ☐, and return this folder.

Please answer the next several questions **EITHER** in the left-hand column of boxes if your company makes feed mainly for **sale. OR** answer in the right-hand column if you make feed mainly for your own **use** (your livestock or poultry production).

3. For which class of animals do you manufacture feed? (please mark all that apply)

	Feed Manufacturer Mainly For SALE	Own USE
Pigs	☐	☐
Beef cattle	☐	☐
Dairy cattle	☐	☐
Layers or pullets	☐	☐
Broilers	☐	☐
Turkeys	☐	☐
Fish	☐	☐
Specialty feed	☐	☐
Pet food	☐	☐
Other (please specify) _____	☐	☐

4. Approximately how many metric tons of feed did you make in 1984 for each of the animal classes marked in question 3? (ignore the other tonnage lines)

	Feed Manufacturer Mainly For SALE	Own USE
	APPROX. Feed Tonnage	
Pigs	_____	_____
Beef cattle	_____	_____
Dairy cattle	_____	_____
Layers or pullets	_____	_____
Broilers	_____	_____
Turkeys	_____	_____
Fish	_____	_____
Specialty feed	_____	_____
Pet food	_____	_____
Other	_____	_____

turn to page 2

MARK your answer in on

5. How do you manufacture your complete feeds, if any? (please mark all that apply)

	Feed Manufacturer, Mainly For SALE	Own USE
From the beginning, starting with manufacturing our own premix(es)	☐	☐
By purchasing a supplement or premix, and blending in our other ingredients	☐	☐
Other	☐	☐

6. Approximately how many metric tons of feed did you make in 1984 of each type shown below? (ignore any type(s) you do not make)

	Feed Manufacturer, Mainly For SALE	Own USE
	APPROX. Feed Tonnage	
Complete feed	_____	_____
Feed supplement or concentrate	_____	_____
Super concentrate or basemix	_____	_____
Feed premix or microingredient package	_____	_____
Other	_____	_____

7. Please mark each of the following feed items that you manufacture mainly for SALE.

	Pig Feed	Beef Feed	Dairy Feed	Poultry Feed	Other Feed
Complete feed	☐	☐	☐	☐	☐
Feed supplement or concentrate	☐	☐	☐	☐	☐
Super concentrate or basemix	☐	☐	☐	☐	☐
Feed premix or micro-ingredient package	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐

8. Please mark each of the following feed items that you manufacture mainly for your own USE.

	Pig Feed	Beef Feed	Dairy Feed	Poultry Feed	Other Feed
Complete feed	☐	☐	☐	☐	☐
Feed supplement or concentrate	☐	☐	☐	☐	☐
Super concentrate or basemix	☐	☐	☐	☐	☐
Feed premix or micro-ingredient package	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐

9. Does your feed mill have surplus manufacturing capacity?

☐ Yes ☐ No

(a) If "yes," at about what percent of capacity does your mill operate now?

_____%

10. In what form(s) is your feed manufactured? (please mark)

- ☐ Meal
- ☐ Crumbles
- ☐ Pellets
- ☐ Cubes
- ☐ Extruded
- ☐ Blocks
- ☐ Liquid feed
- ☐ Milk replacer
- ☐ Other (please specify)

_____

11. How do you dispose of your feed? (please rank by writing "1" beside the method that accounts for your largest tonnage, "2" for your second most important method, etc., for as many as you used in 1984.)

- _____ We sell through a dealer organization
- _____ We sell direct to farmers
- _____ We feed our own animals
- _____ Other (please specify)

_____

12. What additives other than vitamins and minerals are you currently incorporating into your feed? (please mark all that apply)

	Feed Manufacturer, Mainly For SALE	Own USE
Medicines	☐	☐
Growth promoters (including antibiotics, hormones, probiotics, or others)	☐	☐
Anti-oxidants	☐	☐
Mold inhibitors	☐	☐
Synthetic amino acids	☐	☐
Pellet binders	☐	☐
Feed flavors	☐	☐
Other (please specify) _____	☐	☐
None	☐	☐

13. How do you deliver your feed? (please mark)

- ☐ Use our own trucks
- ☐ Used leased trucks
- ☐ Picked up by customer
- ☐ Conveyed from mill directly to nearby animals
- ☐ Other (please specify)

_____

ne or more of the boxes

If you deliver feed in your own, or leased, trucks . . .

(a) About how many trucks do you own or lease? _____ number

(b) Are your feed delivery trucks equipped with a pneumatic, or a mechanical system? (please mark)

- ☐ Mostly pneumatic
- ☐ Mostly mechanical
- ☐ Use both about equally
- ☐ Other (please specify)

_____

4. About what percent of your finished feed is delivered in bags, in bulk?

	Feed Manufacturer, Mainly For SALE	Own USE
% in bags...	____%	____%
% in bulk ...	____%	____%
% other.....	____%	____%
	100%	100%

5. Does your feed manufacturing plant use a computer, or computer services?

☐ Yes ☐ No

(a) If "yes," for which function(s) do you use the computer? (please mark all that apply)

- ☐ Least cost formulation
- ☐ Manufacturing process control
- ☐ Inventory control
- ☐ Invoicing
- ☐ Payroll
- ☐ Customer or sales analysis
- ☐ Market research
- ☐ Purchasing
- ☐ Truck fleet management
- ☐ Other (please specify)

_____

16. Do you now have facilities for analyzing feeds at your location?

☐ Yes ☐ No

(a) Do you routinely use an outside laboratory for analyzing feed?

☐ Yes ☐ No

(b) Do you operate your own feed analysis laboratory?

☐ Yes ☐ No

17. About how often do you sample and check your finished feed for nutrient composition? (please check)

- ☐ Each batch
- ☐ Daily
- ☐ Monthly
- ☐ Twice a year
- ☐ Never
- ☐ Other (please specify)

_____

18. Where does the raw material (grain, cereals, etc.) for your feed production come from?

Approximate percent produced within 50 KM (30 miles) of your mill _____%

Approximate percent supplied from within your country _____%

19. Do you need more storage capacity for your feed raw materials; finished feed products? (please mark)

Need more storage capacity for . . .

- ☐ Raw materials only
- ☐ Finished products only
- ☐ Both
- ☐ Neither one

20. How are raw materials transported to your feed mill? (please mark)

- ☐ Barge
- ☐ Truck
- ☐ Railroad
- ☐ Other (please specify)

_____

21. How many shifts (8-hour work turns) does your feed mill have now? (please mark)

- ☐ One
- ☐ Two
- ☐ Three
- ☐ Other (please specify)

_____

(a) How many *days per week* does your feed mill operate now? (please mark)

- ☐ Less than 5
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ Other (please specify)

_____

22. Is your mill's feed output greater now than it was five years ago?

☐ Yes ☐ No

(a) If "yes," about how much did your output increase?

_____%

23. Do you expect your mill's feed production to increase, decrease, or stay the same in the *next* two years?

- ☐ Increase
- ☐ Decrease
- ☐ Stay the same

24. Do you expect to build a new feed plant or enlarge your present plant in the next two years?

☐ Yes ☐ No

please turn to back page

Please return this folder even if answered only partly.

25. Please mark the types of equipment your feed mill has, type(s) bought in the last two years, and equipment you plan to buy in the next two years.

	Have Now	Bought In Last Two Years	Plan To Buy In Next Two Years
Truck scale(s)	☐	☐	☐
Fork lift trucks	☐	☐	☐
Turnhead distributor(s)	☐	☐	☐
Grain storage bins	☐	☐	☐
Bin level control(s)	☐	☐	☐
Scalper(s), screener(s)	☐	☐	☐
Belt conveyor(s)	☐	☐	☐
Bucket elevator(s)	☐	☐	☐
Drag flight conveyor(s)	☐	☐	☐
Pneumatic conveyor(s)	☐	☐	☐
Screw conveyor(s)	☐	☐	☐
Portable grain auger(s)	☐	☐	☐
Grain drier(s)	☐	☐	☐
Attrition mill(s) (plate)	☐	☐	☐
Flaking mill(s)	☐	☐	☐
Hammermill(s)	☐	☐	☐
Roller mill(s)	☐	☐	☐
Turbo mill(s), fine grind	☐	☐	☐
Hay shredder(s)	☐	☐	☐
Batch controller(s)	☐	☐	☐
Manual	☐	☐	☐
Semi-automatic	☐	☐	☐
Automatic - not computerized	☐	☐	☐
Computer	☐	☐	☐
Mixer(s)	☐	☐	☐
Continuous, volumetric	☐	☐	☐
Horizontal paddle	☐	☐	☐
Horizontal ribbon	☐	☐	☐
Rotary	☐	☐	☐
Vertical	☐	☐	☐
Fat applicator(s)	☐	☐	☐
Liquid supplement mixer(s)	☐	☐	☐
Microingredient blender(s)	☐	☐	☐
Pellet mill(s)	☐	☐	☐
Cooker/extruder(s)	☐	☐	☐
Pellet cooler(s)	☐	☐	☐
Bagging scale(s)	☐	☐	☐
Bag closer(s)	☐	☐	☐
Quality control instrumentation	☐	☐	☐
Dust control system	☐	☐	☐
Boiler	☐	☐	☐
Bulk truck body(ies)	☐	☐	☐
None of the above	☐	☐	☐

26. Do you buy your major feed mill equipment from within your own country, from outside your country, or from both?

- ☐ Buy within my own country
- ☐ Buy from outside my country
- ☐ Buy both from within and outside my country

(a) If you buy any major equipment from outside your own country, which type(s)? (please mark)

- ☐ Quality control equipment
- ☐ Grinding equipment
- ☐ Pelleting equipment
- ☐ Raw material/finished product
- ☐ Transportation equipment
- ☐ Process control equipment
- ☐ Conveying equipment
- ☐ Other

27. Are advertisements in feed industry magazines important sources of information when you are planning to buy major feed plant equipment or supplies? (please mark)

- ☐ Very important
- ☐ Of some importance
- ☐ Not important

28. Which of the following feed-related exhibitions (fairs) did you visit in the last three years? (please mark)

- ☐ AFMA
- ☐ AgAsia
- ☐ FeedTech
- ☐ Huhn and Schwein
- ☐ PowTech
- ☐ SIMA
- ☐ Southeastern International Poultry Trade Show
- ☐ Victam
- ☐ VIV
- ☐ None of the above

Thank you for returning this folder promptly. We appreciate your interest in Feed International, and I am sure this information will help us to make it even more valuable to you.

Charles Olentine, Editor

FEED INTERNATIONAL

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